Lamp powers fan with no electricity

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Two students in the Department of Engineering Design at the Indian Institute of Technology Madras in Chennai have come up with the idea of using oil lamps to power fans for use in villages with no access to electricity.

Swapnil Jain and Vaibhor Barnwal have called their idea, the "Famp", and showed a semi-working version of it at the recently held Made in Brunel 2009 event at the Business Design Centre in London.

Barnwal told us that 96% of the heat from an oil lamp is wasted and only 4% is used to produce light. Their idea, therefore, is to mount a small Stirling engine over the lamp, and use this to turn the fan.

Estimated performance figures for a production version, they said, are based on a calorific value of kerosene of 43.1 kJ/g. Assuming the engine efficiency to be 45% of the 10% Carnot efficiency, the power output should be 15W, sufficient, they said, to turn the fan blades at about 80% of the speed of an electric fan. They said the Stirling engine part of the project, "Has been made to work" and target cost of the Famp is £20.

The students are developing the design under the direction of Professor Saravana Kumar at the Institute. For more information email Swapnil.iitm@gmail.com and/or gsaravana@iitm.ac.in

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